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| 10/686,468 | 10/15/2003 | Kartik G. Iyer | 01-817 | 7808 |

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Michael B. McNeil
Liell & McNeil Attorneys PC
P.O. Box 2417
Bloomington, IN 47402

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| EXAMINER |
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LAWRENCE JR, FRANK M

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| ART UNIT | PAPER NUMBER |
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1724

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,468

Applicant(s)

IYER ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 11, 15, 31, 51.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of cross flow passages of claim 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Claims 5, 12 and 21 are objected to because of the following informalities: A period "." should be inserted at the end of each of claims 5, 12 and 21. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 8-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The examiner can not determine what is being referred to by the plurality of cross flow passages having a relatively small predetermined flow area compared with the flow paths, as described in claim 8. If this feature is enabled, please explain it. For examination, the flow paths are taken to be any path between the main flow paths that is capable of conducting a fluid. Claims 9-14 are rejected for depending from a rejected base claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mills (4,281,512).

8. Mills '512 teaches a system for regenerating a particle trap, comprising operating a valve (28) to change the flow area to particle traps (16,18) from a relatively large flow area in conduit (10) to a relatively small cross flow area that is greater than zero in air lines (24, 26), and regenerating the traps while supplying air through the air lines and heating the traps (figure 1, col. 4, lines 9-44). Each of the traps can be made of steel and divide a housing into an upstream volume and downstream volume having equal flow areas (see figures, col. 3, lines 62-68).

9. Claims 1, 2, 8, 9, 15, 16, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Gillingham et al. (5,293,742).

10. Gillingham et al. '742 teach a particle trap assembly comprising a housing (42) divided into quadrants by walls (82) that define a plurality of main flow paths, a plurality of trap filter tubes (38) in each quadrant, a heater in each filter such as a wire mesh (256, conductive filter) attached to electric terminals exposed outside of the housing, a plurality of valves (136) attached to the housing for substantially blocking exhaust flow to one or more quadrants during controlled, selective regeneration heating, and openings (85) for allowing a small cross flow of exhaust from the main flow paths to a quadrant being regenerated. The traps and walls divide the housing into upstream and downstream portions having equal cross flow areas (see figures, col. 5, lines 14-19, col. 6, lines 28-31, col. 7, line 64 to col. 8, line 60, col. 13, lines 6-25).

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11. Claims 1, 3-6, 8, 10-13, 15-18 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Peter et al. (6,572,682).

12. Peter et al. '682 teach a particle trap assembly comprising a housing (42) divided into sections by a plurality of conductive filter tube traps (16) that define a plurality of main flow paths, a plurality of rounded sub cartridges (66) separated by spacers (72) making up each filter tube, electric terminals attached to each cartridge for heating during a regeneration period, a plurality of valves (36) attached to the housing for substantially but not completely blocking exhaust flow to one or more quadrants during controlled, selective regeneration heating, and small cross paths between partially open valves and other main flow paths allowing flow of exhaust to a filter being regenerated (see figures, col. 7, line 47 to col. 9, line 12). The traps and a plate (12) divide the housing into upstream and downstream portions having equal cross flow areas.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2, 7, 9, 14, 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter et al. '682 in view of Gillingham et al. '742.

15. Peter et al. '682 disclose all of the limitations of the claims except that the spacers are ceramic and that the electric terminals are exposed outside the housing. Gillingham et al. '742 disclose a particle trap as described in paragraph 10 above. It would have been obvious to one

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having ordinary skill in the art at the time of the invention to modify the terminals of Peter et al. '682 to be exposed outside of the housing so that they can be easily accessed for maintenance and cleaning without requiring disassembly of the housing. One skilled in the art would also know to use an acceptable heat-resistant material such as ceramic for internal portions of the device, as suggested in Peter et al. (col. 10, lines 52-55).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached PTO 892 form disclose particle trap filter systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence

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Primary Examiner
Art Unit 1724

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Frank Lawrence
7-22-05